Table S1. Names, Descriptions, and Units of Measurement (where applicable) of the Variables Used in the Classification Trees (Table adapted from Ivanek, 2009 [a])[b]

Variable name	Description	Unit
Eigenvector_1_spatial	Eigenvector generated for spatially derived properties including aws025wta, aws050wta, aws0100wta, wta0150, and om_r	
aws025wta	The volume of water that the soil to the specified depth can store that is available to plants and expressed as the weighted average of all components	cm
aws050wta	As for aws025wta, but 0-50 cm	cm
aws0100wta	As for aws025wta, but 0-100 cm	cm
aws0150wta	As for aws025wta, but 0-150 cm	cm
om_r	Total organic matter content for the soil layer, representative for the soil map unit	%, dry weight
Eigenvector_1_temporal	Eigenvector generated for temporally derived properties including temperature max, min and daily average	
TMIN_0	Minimum temperature on the specified day, t0	°C
TMIN_1	As for TMIN_0, but 1 day before day, t1	°C
TMIN_2	As for TMIN_0, but 2 days before day, t2	°C
TMIN_3	As for TMIN_0, but 3 days before day, t3	°C
TMIN_0_1	Average minimum temperature for the specified time period, t0-t1	°C
TMIN_0_2	As for TMIN_0_1, but t0-t2	°C
TMIN_0_3	As for TMIN_0_1, but t0-t3	°C
TMIN_0_4	As for TMIN_0_1, but t0-t4	°C
TMIN_0_5	As for TMIN_0_1, but t0-t5	°C
TMIN_0_6	As for TMIN_0_1, but t0-t6	°C
TMIN_0_7	As for TMIN_0_1, but t0-t7	°C
TMIN_0_8	As for TMIN_0_1, but t0-t8	°C
TMIN_0_9	As for TMIN_0_1, but t0-t9	°C
TMIN_0_10	As for TMIN_0_1, but t0-t10	°C
TMAX_0	Maximum temperature on the specified day, t0	°C
TMAX_1	As for TMAX_0, but 1 day before day, t1	°C
TMAX_2	As for TMAX_0, but 2 days before day, t2	°C
TMAX_3	As for TMAX_0, but 3 days before day, t3	°C
TMAX_0_1	Average maximum temperature for the specified time period, t0-t1	°C
TMAX_0_2	As for TMAX_0_1, but t0-t2	°C
TMAX_0_3	As for TMAX_0_1, but t0-t3	°C
TMAX_0_4	As for TMAX_0_1, but t0-t4	°C
TMAX_0_5	As for TMAX_0_1, but t0-t5	°C
TMAX_0_6	As for TMAX_0_1, but t0-t6	°C
TMAX_0_7	As for TMAX_0_1, but t0-t7	°C

TMAX_0_8	As for TMAX_0_1, but t0-t8	°C
TMAX_0_9	As for TMAX_0_1, but t0-t9	°C
TMAX_0_10	As for TMAX_0_1, but t0-t10	°C
TOBS_0	Average daily temperature on the specified day, t0	°C
TOBS_1	As for TOBS_0, but 1 day before day, t1	°C
TOBS_2	As for TOBS_0, but 2 days before day, t2	°C
TOBS_0_1	Average daily temperature for the specified time period, t0-t1	°C
TOBS_0_2	As for TOBS_0_1, but t0-t2	°C
TOBS_0_3	As for TOBS_0_1, but t0-t3	°C
TOBS_0_4	As for TOBS_0_1, but t0-t4	°C
TOBS_0_5	As for TOBS_0_1, but t0-t5	°C
TOBS_0_6	As for TOBS_0_1, but t0-t6	°C
TOBS_0_7	As for TOBS_0_1, but t0-t7	°C
TOBS_0_8	As for TOBS_0_1, but t0-t8	°C
TOBS_0_9	As for TOBS_0_1, but t0-t9	°C
TOBS_0_10	As for TOBS_0_1, but t0-t10	°C
Eigenvector_2_temporal	Eigenvector generated for temporally derived properties including precipitation	
PRCP_2	Amount of rain 2 days before day of collection, t2	mm
PRCP_3	As PRCP_2, but 3 days before day, t3	mm
PRCP_0_2	Average precipitation for the specified time period, t0-t2	mm
PRCP_0_3	As for PRCP_0_2, but t0-t3	mm
PRCP_0_4	As for PRCP_0_2, but t0-t4	mm
PRCP_0_5	As for PRCP_0_2, but t0-t5	mm
PRCP_0_6	As for PRCP_0_2, but t0-t6	mm
PRCP_0_7	As for PRCP_0_2, but t0-t7	mm
PRCP_0_8	As for PRCP_0_2, but t0-t8	mm
PRCP_0_9	As for PRCP_0_2, but t0-t9	mm
PRCP_0_10	As for PRCP_0_2, but t0-t10	mm
Independent	Variables added to classification tree step not as an eigenvector	
forest_prox	Proximity to forest	m
live_prox	Proximity to pastures	m
water_prox	Proximity to water	m
urban_prox	Proximity to urban development	m
elev	Vertical elevation	m
slope	Difference in elevation between two points, expressed as a percentage between two points	%
wtdepannmi	The shallowest depth to a wet soil layer (water table), annual minimum	cm

drclassdcd	The natural drainage condition of the soil (referring to the frequency and duration of wet periods) of the dominant drainage class	NA
farm	Farm ID	NA
sample type	Type of samples collected soil, water, drag swab and fecal matter	NA
season	Season when samples were collected fall, winter, spring and summer	NA
TOBS_3	Daily average temperature 3 days before day of collection, t3	°C
PRCP_0	Amt of rain on the specified day of collection	mm
PRCP_1	As for PRCP_0, but 1 day before day, t1	mm
PRCP_0_1	Average precipitation for the specified time period, t0-t1	mm
FT_0	No. of Freeze/thaw cycles on the specified day, t0	NA
FT_1	As for FT_0, but 1 day before day, t1	NA
FT_2	As for FT_0, but 2 days before day, t2	NA
FT_3	As for FT_0, but 3 days before day, t3	NA
FT_0_1	No. Freeze/thaw cycles for the specified time period, t0-t1	NA
FT_0_2	As for FT_0_1, but t0-t2	NA
FT_0_3	As for FT_0_1, but t0-t3	NA
FT_0_4	As for FT_0_1, but t0-t4	NA
FT_0_5	As for FT_0_1, but t0-t5	NA
FT_0_6	As for FT_0_1, but t0-t6	NA
FT_0_7	As for FT_0_1, but t0-t7	NA
FT_0_8	As for FT_0_1, but t0-t8	NA
FT_0_9	As for FT_0_1, but t0-t9	NA
FT_0_10	As for FT_0_1, but t0-t10	NA

[a] **Ivanek, R., Y. T. Grohn, M. T. Wells, A. J. Lembo, B. D. Sauders, and M. Wiedmann.** 2009. Modeling of Spatially Referenced Environmental and Meteorological Factors Influencing the Probability of *Listeria* Species Isolation from Natural Environments. Appl. Environ. Microbiol. **75:**5893-5909.

[b]The day of sample collection is denoted at t0, the day before is t1, and so on until 10 days before collection (t10). NA is not applicable.